



EcoSummary

Wrights Creek at State Road 177A near Bonifay, Holmes County

August 4, 1999



BioRecon: A rapid, cost-effective screening mechanism for identification of biological impairment.

Introduction

Wrights Creek at SR177A, a tributary to the Choctawhatchee River, is located in Holmes County. This area is located in subregion 65G (Dougherty/Marianna Plains) with local use mostly agriculture and silviculture. Sedimentation is a major concern in this area. Sewage discharged by the towns of Caryville, Esto, Noma, and Westville may impact Wrights Creek. This site is one of 18 locations in Northwest Florida selected for the establishment of an USGS gaging station. Stage flow and discharge flow data will be analyzed by USGS in conjunction with the collection of water quality samples by FDEP, as part of the Surface Water Temporal Variability (SWTV)/TMDL project. The Water Quality Assessment Section (WQAS) of FDEP-Tallahassee assists in these efforts. All data will be used by FDEP and EPA to develop Total Maximum Daily Loads (TMDLs) for these waterbodies. The purpose of a TMDL is to determine the amount of pollution reduction needed to restore the system to a condition suitable for its designated use. In this case, the designated use is for recreation and maintenance of a healthy, well-balanced aquatic community. DEP's Water Quality Assessment Section is charged with assessing the status of selected waterbodies on the 1998 303(d) TMDL list that were placed on the list with limited data. The data available for these selected waterbodies consisted of less than 10 observations in the STORET database, historical STORET data, or qualitative non-point source survey data only. While the Wrights Creek is not on the list, concerns about turbidity and coliform bacteria had been raised. Recent water quality data suggests that the Wrights Creek watershed is currently meeting standards for Class III waterbodies, including criteria for turbidity and coliform bacteria. According to the 1998 305(b) report, it is fully meeting its designated use.

Results and Discussion

Physical/chemical parameters and nutrients were sampled in August of 1999. Surface water samples were collected and analyzed for total ammonia, nitrite-nitrate, total Kjeldahl nitrogen (TKN), and total phosphorus. Samples were also analyzed for total suspended solids (TSS), turbidity, fecal and total coliform bacteria levels plus other chemical parameters. Although macroinvertebrate communities were not sampled at this time, the dragonflies *Hagenius brevistylus* and *Progomphus obscurus* were observed patrolling Wrights Creek. These species are good biological indicators of clean water in northwest Florida. All measured physical/chemical parameters and water quality variables met acceptable criteria for Class III waterbodies. Turbidity (4.7 NTU), while not in violation of state standards (29 NTU above background), was higher than 70% of other Florida streams. Fecal coliform (200 colonies/ml) and total coliform (1000 colonies/ml) levels were below the Class III standards of 800 colonies/ml and 2400 colonies/ml, respectively. Concurrent hydrolab samplings were taken on Wrights Creek at SR177 and at SR179. Dissolved oxygen concentrations were very good with values of 8.46 mg/l and 7.58 mg/l, respectively. Adequate dissolved oxygen is necessary to maintain a healthy, well-balanced aquatic ecosystem.

Conclusions

Wrights Creek at Hwy. 177A met acceptable levels for the majority of measured physical/chemical and water quality parameters, including turbidity and coliform bacteria. Only the nitrite-nitrate level (0.27 mg/l) was slightly elevated, exceeding the level found in 70% of other Florida streams. It is recommended that Wrights Creek still be monitored periodically for water quality, especially for nitrite-nitrate levels.

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Published by the Florida Department of Environmental Protection,
Tallahassee, FL.
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